



400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J1982

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AUG1998

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Superseding J1982 DEC91

Submitted for recognition as an American National Standard

(R) Nomenclature—Wheels for Passenger Cars, Light Trucks, and Multipurpose Vehicles

1. **Scope**—This SAE Recommended Practice establishes uniform engineering nomenclature for wheels and their components used on passenger cars, light trucks, and multipurpose vehicles. This nomenclature and accompanying drawings are intended to define fundamental wheel terms rather than to provide a comprehensive tabulation of all wheel designs.
2. **References**
 - 2.1 **Related Publications**—The following publications are provided for information purposes only and are not a required part of this document.
 - 2.1.1 **SAE PUBLICATIONS**—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.
 - SAE J393—Nomenclature—Wheel, Hubs, and Rims for Commercial Vehicles
 - SAE J694—Disc Wheel/Hub or Drum Interface Dimensions—Commercial Vehicles
 - SAE J851—Dimensions for Demountable Rims, Demountable Rims and Rim Spacers—Commercial Vehicles
 - SAE J1986—Balance Weight and Rim Flange Design Specifications, Test Procedures, and Performance Recommendations
 - SAE J1992—Wheel/Rims—Military Vehicles—Test Procedures and Performance Requirements
 - 2.1.2 **ISO PUBLICATION**—Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.
 - ISO 3911—Wheels/rims—Nomenclature, designation, and marking
3. **Definitions**
 - 3.1 **Wheel**—A rotating load-carrying member between the tire and the hub. It usually consists of two major parts: (a) the rim; (b) the wheel disc. The rim and wheel disc may be integral, permanently attached, or detachable.
 - 3.1.1 **RIM**—That part of the wheel on which the tire is mounted and supported. (See Figure 1.)
 - 3.1.2 **WHEEL DISC**—That part of the wheel which is the supporting member between the hub and the rim. (See Figure 2.)

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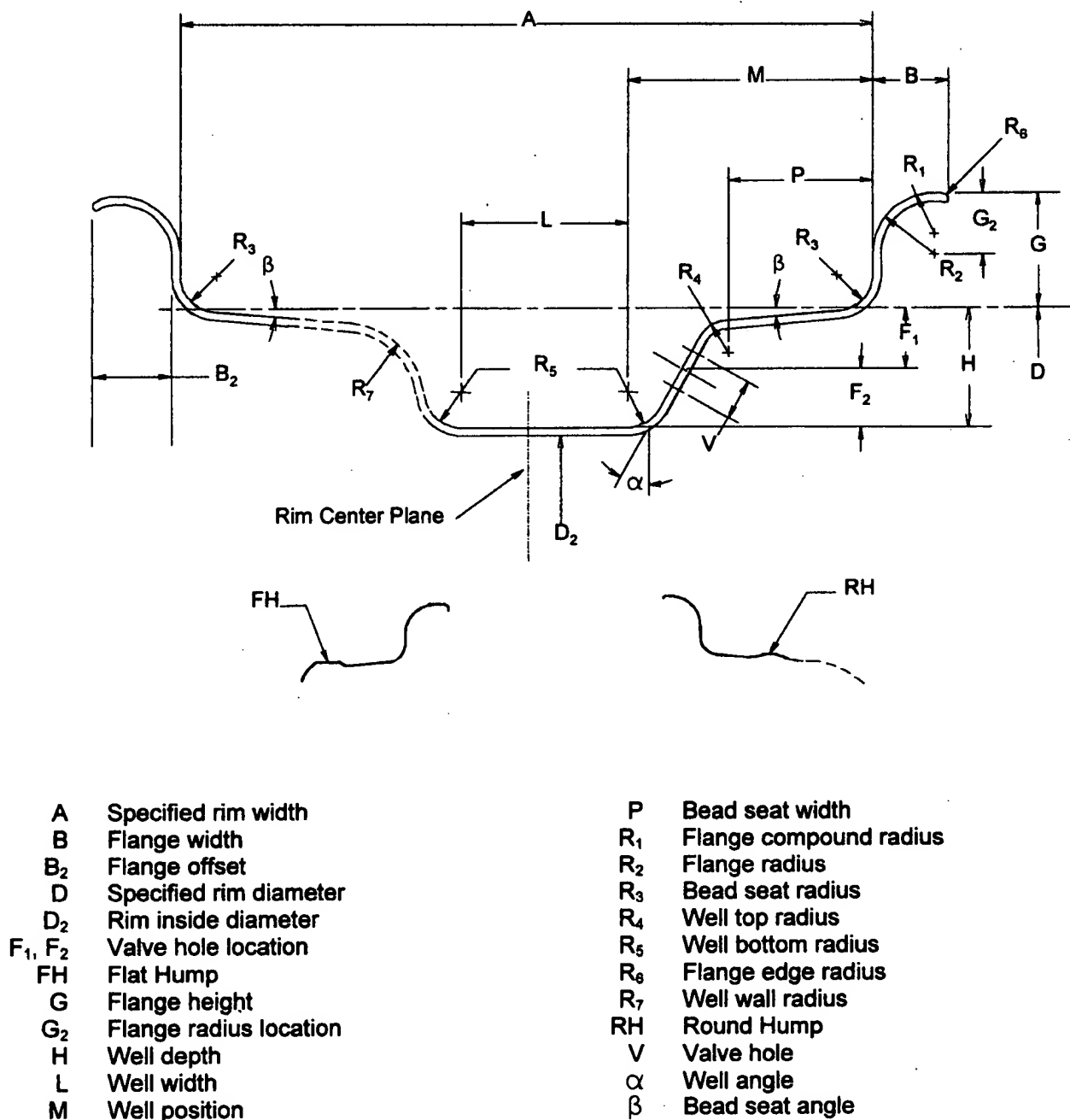
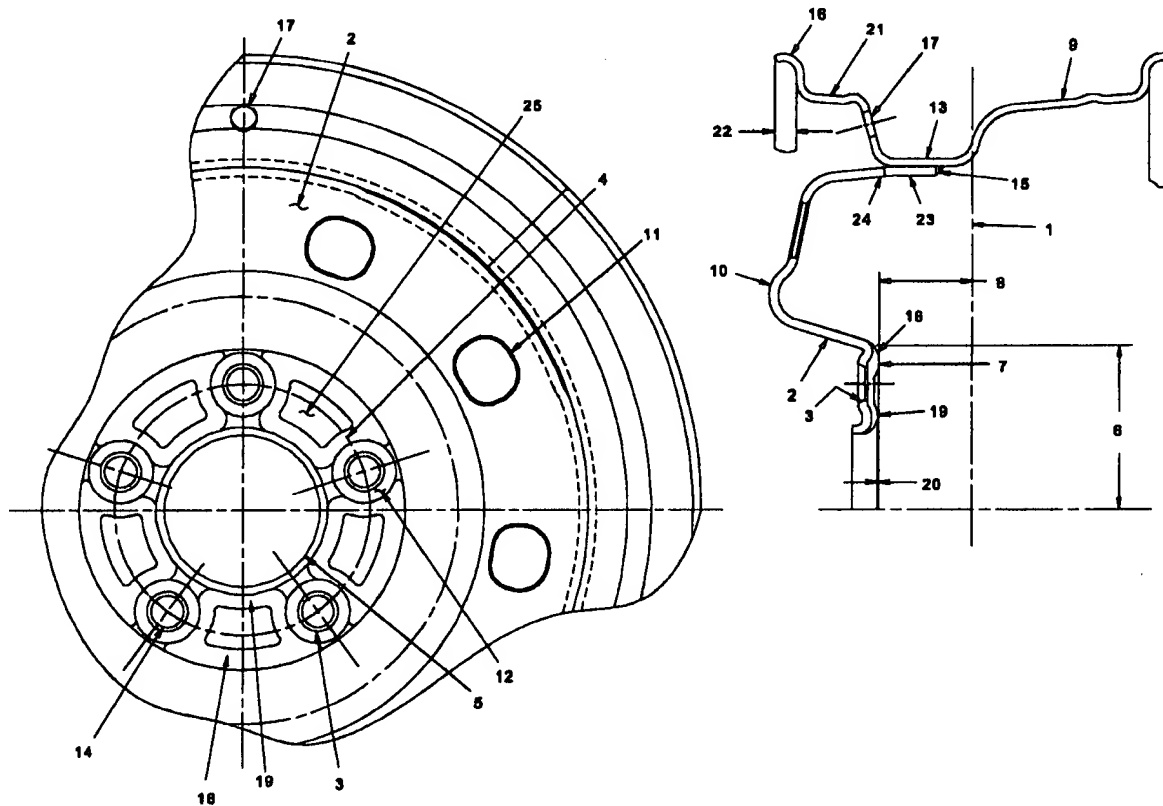


FIGURE 1—RIM

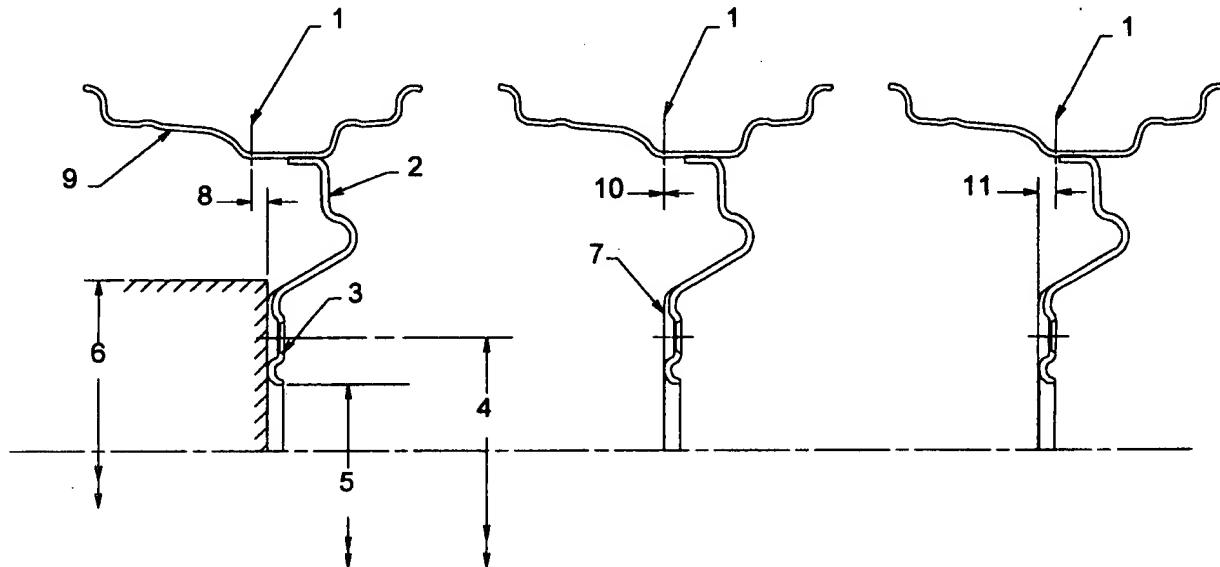


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|--|------------------------|
| 1. Rim Center Plane | 14. Bolt Hole |
| 2. Disc | 15. Assembly Weld |
| 3. Nut Seat | 16. Rim Flange |
| 4. Pitch Circle Diameter of Bolt Holes | 17. Valve Hole |
| 5. Center Hole Diameter | 18. Outer Mounting Pad |
| 6. (See Figure 3) | 19. Inner Mounting Pad |
| 7. Attachment Face | 20. Step |
| 8. Inset | 21. Bead Seat |
| 9. Rim | 22. Flange Offset |
| 10. Hat | 23. Disc Flange |
| 11. Window | 24. Disc Scallop |
| 12. Nut Boss | 25. Rib |
| 13. Well | |

FIGURE 2—DISC WHEEL

3.1.3 HUB—The rotating member that represents the attachment face for wheel discs.

3.1.4 INSET WHEEL—A wheel so constructed that the center plane of the rim is located inboard of the attachment face of the disc. Inset is the distance from the attachment face of the disc to the center plane of the rim. (See Figure 3.)



- | | |
|--|--------------------|
| 1. Rim Center Plane | 7. Attachment Face |
| 2. Disc | 8. Inset |
| 3. Nut Seat | 9. Rim |
| 4. Pitch Circle Diameter of Bolt Holes | 10. Zero set |
| 5. Center Hole Diameter | 11. Outset |
| 6. Attachment Face Diameter | |

FIGURE 3—RIM TO DISC LOCATION

3.1.5 ZEROSET WHEEL—A wheel so constructed that the center plane of the rim is coincident with the attachment face of the disc. (See Figure 3.)

3.1.6 OUTSET WHEEL—A wheel so constructed that the center plane of the rim is located outboard of the attachment face of the disc. Outset is the distance from the attachment face of the disc to the center plane of the rim. (See Figure 3.)

3.2 Wheel Types

3.2.1 DISC WHEEL—A permanent combination of a rim and wheel disc. (See Figure 2.)

3.3 Rim Types

- 3.3.1 ONE-PIECE (DROP CENTER)—A rim which is of one-piece construction and incorporates a well. (See Figure 1.)
- 3.3.2 TWO-PIECE—A rim with two pieces that are not permanently attached.

3.4 Rim Nomenclature—(See Figure 1.)

- 3.4.1 FLANGE—That part of the rim which provides lateral support to the tire and a means for attaching balance weights and decorative trim components.
- 3.4.2 BEAD SEAT—That part of the rim which provides radial support to the tire and air pressure seal for tubeless tires.
- 3.4.3 WELL—That part of the rim so located with sufficient depth and width to enable the tire beads to be mounted and dismounted over the mounting side rim flange.
- 3.4.4 VALVE HOLE—The hole or slot in the rim which accommodates the valve for tire inflation.

3.5 Disc Nomenclature—(See Figure 2.)

- 3.5.1 DISC FLANGE—The part of the disc that supports the rim.
- 3.5.2 HAT—The transition area in the disc between the disc flange and the attachment area.
- 3.5.3 ATTACHMENT FACE—The surface of the disc supported by the hub face or other components mounted to the hub face.
- 3.5.4 INNER MOUNTING PAD—The attachment face of the disc located inside the pitch circle diameter of bolt holes.
- 3.5.5 OUTER MOUNTING PAD—The attachment face of the disc located outside the pitch circle diameter of bolt holes.
- 3.5.6 NUT BOSS—A raised portion in the attachment face in which to locate the bolt hole.
- 3.5.7 STEP—The axial distance between the datum of the outer mounting pad and the inner mounting pad.
- 3.5.8 BOLT HOLE—Mounting stud clearance hole.
- 3.5.9 NUT SEAT—The portion of the disc at the bolt hole that is the bearing surface for the wheel nut.
- 3.5.10 PITCH CIRCLE DIAMETER OF BOLT HOLES—A circle locating the centers of the bolt holes that are used to attach the wheel to the hub.
- 3.5.11 RIB—The raised area between bolt holes.
- 3.5.12 CENTER HOLE—The clearance hole for the pilot of the hub.
- 3.5.13 SCALLOP—A relief in the disc flange, reducing the contact area between the disc and rim.
- 3.5.14 WINDOW—A hole created in the surface of the disc.

3.6 Wheel Nomenclature—(See Figure 2.)

- 3.6.1 ASSEMBLY WELD—The connection of the disc and rim components. (See Figure 2.)
- 3.6.2 RIM CENTER PLANE—The center that is located at half the distance between the rim flanges. (See Figure 1.)
- 3.6.3 OUTSET, INSET, ZEROSET—The distance from the rim center plane to the attachment surface of the disc. (See Figure 3.)

4. Notes

- 4.1 **Marginal Indicia**—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE WHEEL STANDARDS COMMITTEE

SAE J1982 Revised AUG1998

Rationale—Not applicable.

Relationship of SAE Standard to ISO Standard—Not applicable.

Application—This SAE Recommended Practice establishes uniform engineering nomenclature for wheels and their components used on passenger cars, light trucks, and multipurpose vehicles. This nomenclature and accompanied drawings are intended to define fundamental wheel terms rather than to provide a comprehensive tabulation of all wheel designs.

Reference Section

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ISO 3911—Wheels/rims—Nomenclature, designation, and marking

Developed by the SAE Wheel Standards Committee